J. New York Entomol. Soc. 102(3):355–360, 1994

A REMARKABLE NEW BAMBOO LYGAEID FROM MEXICO AND A NEW SPECIES OF *PATRITIUS* FROM VENEZUELA (HEMIPTERA: LYGAEIDAE: BLISSINAE)

James A. Slater and Harry Brailovsky

Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, Connecticut 06269, and
Instituto de Biologia, Universidad Nacional Autonoma de Mexico, Mexico, D.F. 04510

Abstract.—*Toonglasa indomita* and *Patritius osuna* are described as new species from Mexico and Venezuela respectively. The former is noted to have spectacular elongate spines protruding from the posterior end of the male 8th abdominal segment. A discussion is included of the sexual dimorphism in species of *Toonglasa* and the reasons for this are hypothesized. New bamboo host plants are included for previously described species of *Toonglasa.*

Recent years have seen the addition of many new species of bamboo living Blissinae in the Western Hemisphere. Most of these species are placed in the genus *Toonglasa* Distant (Slater and Brailovsky, 1983, 1990).

One of the remarkable features of species of *Toonglasa* is the variety of secondary sexual structures of the male abdomen. These occur in a variety of conditions often involving different segments such as a series of spinules on most of the abdominal sternites, as swellings of the posterior segments to form a rather annulate appearance, as elongations of the connexivum and adjacent area of the seventh abdominal segment to form somewhat "pincer-like" protrusions and as various small spines and ridges on the eighth abdominal sternum. The species described below has carried this last development to an extreme condition in which the ventral surface of segment eight is produced into three very elongate, serrate, needle-sharp spines that project over the genital capsule (Figs. 1, 2) and are connected at their bases by a ridge bearing a series of serrate spinules.

The development of these caudal secondary structures in a subfamily which otherwise rarely shows such conditions is difficult to explain. It is true that other Blissinae show sexual dimorphism, but usually as spines and "tusks" on the head. In the Oriental and Australian genus *Pirkimerus* Distant (also bamboo feeders) the bucculae of the males are often strongly and bizarrely produced (Slater and Ahmad, 1965).

The reason for this phenomenon is unknown. David Wagner (pers. comm.) has suggested that because bamboos, especially in the New World, are a limited and long lived group speciation in such situations frequently involves secondary sexual structures to reinforce species recognition and avoid mating mistakes. Such a hypothesis would imply that several species use the same species of host plant. This does appear likely to be the case in *Toonglasa* as more than one species has been taken breeding on a single host and several species appear to breed on more than one species of bamboo. This is in contrast to what is known of many species of such large genera

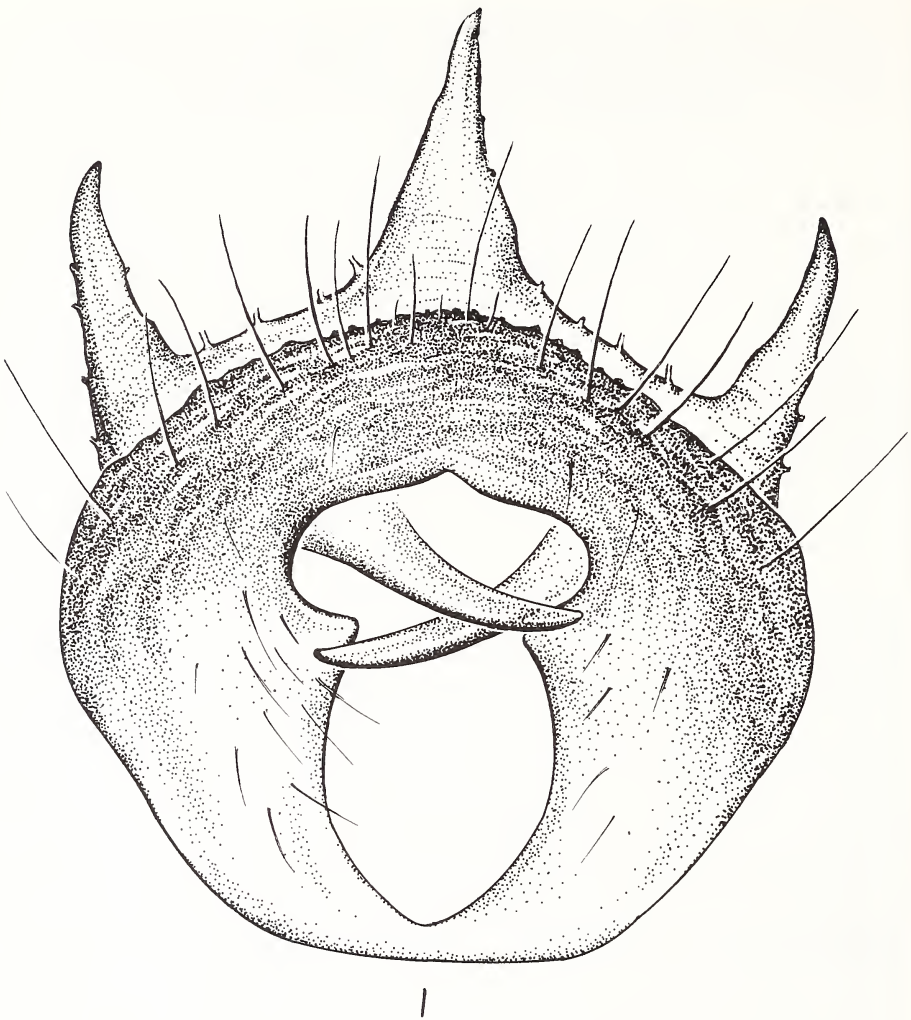

Fig. 1. *Toonglasa indomita*, new species. Eighth and ninth male abdominal segments dorsal view.

as *Ischnodemus* and *Blissus* which are primarily grass feeders and tend to be host specific (Slater, 1976).

Some species of *Patritius* also breed on bamboo. This genus was revised by Slater (1979) and we take this opportunity to describe an additional species of these rarely collected insects.

Toonglasa indomita, new species

Relatively robust, elongate, parallel sided. Head, anterior two-thirds of pronotum, scutellum, clavus, distal one-half of corium, basal two-thirds of membrane, distal one-half of fourth antennal segment, head below, thoracic pleuron and sternum black.

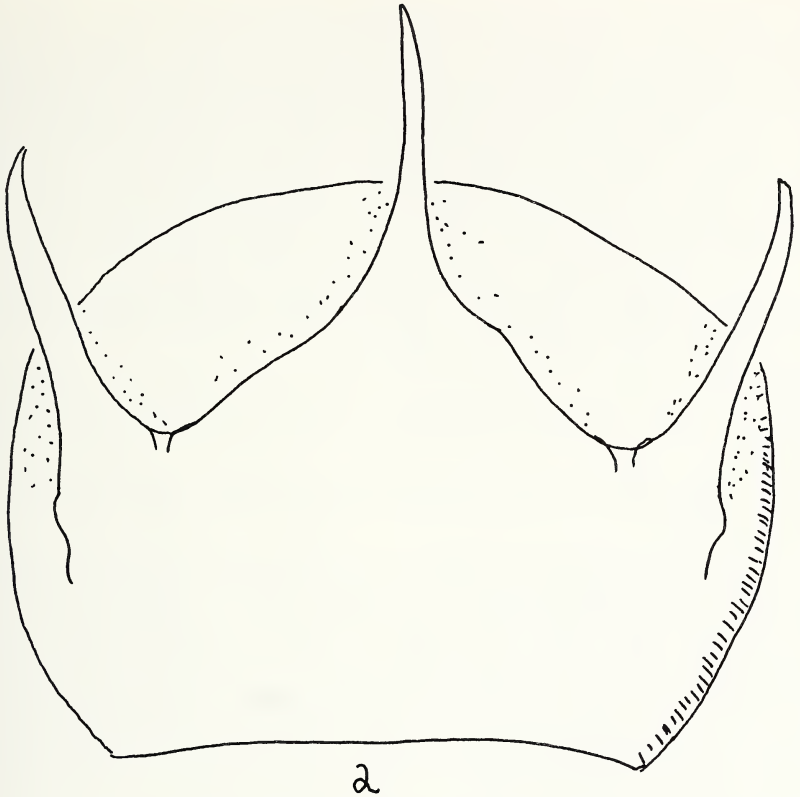

Fig. 2. *Toonglasa indomita*, new species. Eighth and ninth male abdominal segments ventral view.

Posterior pronotal lobe, abdominal sternum (except for connexiva) and coxae dark chestnut brown. Basal two-thirds of corium and apical one-third of membrane translucent, light gray-yellow. First three antennal segments and basal one-third of fourth antennal segment yellow. Body above completely shining, polished, except for a narrow gray pruinose basal area of scutellum. Pruinose below on venter of head and prothorax between coxae. Large dull evaporative area covering entire anterior lobe of metapleuron and posterior edge of mesopleuron. Head and pronotum with scattered, elongate upstanding hairs. Vertex, anterior pronotal collar and broad central area of pronotum punctate, latter punctures irregular and anastomosing.

Head non-declivent, eyes large set on short head extensions, remote from anterolateral pronotal angles. Length head 0.64, width 0.84, interocular space 0.50. Pronotum with well developed anterior collar, lateral margins broadly rounded on anterior one-half, straight sided from transverse impression to humeral angles; calli large, covering most of anterior lobe, impunctate; posterior pronotal margin concave. Length pronotum 1.29, width 1.60. Scutellum rugosely punctate, a distinct median carina present. Length scutellum 0.66, width 0.70. Length claval commissure 0.60. Midline distance apex clavus-apex corium 1.20. Midline distance apex corium-apex abdomen 1.92. Membrane extending posteriorly midway over seventh abdominal

tergum. Apex of abdomen sinuately truncate with caudo-lateral corners of abdominal tergum seven with a downcurved sharp, semi-recurved spine. Eighth abdominal segment ventrally with three elongate slender sharp upcurved spines extending well over most of genital capsule, outer spines with sharp spinules along lateral margins (Figs. 1, 2). Metathoracic scent gland auricle elongate, strongly curved anteriorly, apex rounded. Forefemur strongly incrassate, ventrally narrowed to a sharp ridge bearing distally a single large outward curving black tipped spine. Labium short, extending well onto prosternum, but not attaining forecoxae; third segment exceeding base of head by about one half its length. Length labial segments I 0.32, II 0.20, III 0.18, IV 0.22. First antennal segment slightly exceeding apex of tylus, segments II and III slender, filiform, segment IV fusiform. Length antennal segments I 0.20, II 0.54, III 0.56, IV 0.74. Total body length 6.64.

Holotype: Male: MEXICO: *Chiapas:* Reserva: El Ocote. 30.IV.1993 (E. Barrera). In UNAM.

Paratypes: 2 males, 4 females. Same data as holotype. In UNAM and J. A. Slater Collections.

Adults and nymphs were taken breeding on the bamboo *Rhipidocladum pittieri* (Hack) McClure.

Toonglasa indomita will key to couplet 17 in Slater and Brailovsky (1990). Species at this couplet are separated by whether or not there is an elongate protrusion extending posteriorly from abdominal connexivum seven. *T. indomita* does not pass readily through either side of the couplet. It does not have an elongate process extending backward from the end of the connexivum, but there is not a simple end to the connexivum either. Rather the connexivum ends in a short, downward bent and recurved hooked spine at the end of the connexivum which is readily visible as the end of the abdomen is markedly truncate. *T. indomita* is most closely related to *T. elegans* Slater and Brailovsky (see fig. 1 in Slater and Brailovsky, 1990) resembling the latter in the shining dorsal surface, general coloration and pale yellow appendages. *T. indomita* is a broader more robust species, has only the base of the scutellum pruinose (scutellum entirely pruinose in *elegans*). *T. elegans* has the propleuron and mesopleuron pruinose whereas these areas are polished and shining in *indomita.* These pruinosity differences will separate females of the two species. Males of course are readily separable by the striking differences in the posterior segments of the abdomen. The color and texture of the hemelytra are also very different in the two species. In *elegans* the clavus and corium are both dull with the corium laterally pale contrasting with the suffused gray-brown central area. In *indomita* the hemelytra are polished and shining and the corium is pale on the proximal half and almost black distally. The metathoracic scent gland auricle of *indomita* is more elongate and more strongly curved anteriorly than it is in *elegans.* Such other dorsally non-pruinose species of *Toonglasa* as *collaris* (Signoret) and *collaroides* (Slater and Wilcox) agree with *elegans* in having the scutellum, propleuron and mesopleuron pruinose.

ADDITIONAL RECORDS OF *TOONGLASA*

Toonglasa tumorosis Slater and Wilcox. 5 males, 1 female. MEXICO: *Chiapas:* 10 km al sur o al Sw de Jaltenango 4.V.1993 (E. Barrera). On the bamboo *Arthostilidium excelsum* Griseb.

Toonglasa umbrata (Distant). 5 males, 1 female. MEXICO: *Chiapas:* 20 km Carrl. Tuxtla Gutierrez Ocozocoautla 30.IV.1993 (E. Barrera).

Patritius osuna, new species

Head, anterior pronotal lobe, scutellum, corium, membrane of forewing, thoracic pleura and sterna black. Posterior pronotal lobe, clavus, explanate corial margins and abdominal sternum dark reddish brown, latter becoming lighter laterally and caudally. Legs uniformly pale yellow. Antennae light brown, tinged with yellowish, distal third of fourth segment black. Body surface almost completely strongly shining contrasting strongly with dull surface of forewing membrane and a narrow dull strip along outer margin of clavus and adjacent area of corium. Dorsal surface appearing nearly glabrous but a few short upright hairs present on all dorsal surfaces.

Head non-declivent; tylus reaching middle of first antennal segment. Eyes set on short lateral head projections and well away from anterior margin of pronotum. Length head 0.80, width 1.02, interocular space 0.74. Pronotum with distinct anterior collar delimited posteriorly by a series of coarse punctures; lateral margins sinuate, tapering from humeral angles to anterior margin; transverse impression shallow and incomplete mesally; calli impunctate, slightly impressed. Posterior pronotal lobe with small scattered inconspicuous punctures, posterior margin deeply concave. Length pronotum 1.80, width 2.36. Scutellum coarsely punctate with prominent median carina. Length scutellum 1.0, width 1.20. Lateral corial margins straight; membrane extending midway over seventh abdominal tergum. Length claval commissure 0.76. Midline distance apex clavus-apex corium 1.60. Midline distance apex corium-apex abdomen 3.44. Metathoracic scent gland auricle crescent shaped, strongly curving anteriorly with blunt apex. Fore femur strongly incrassate, armed below on distal third with one large curved spine and 4 smaller spines, 2 on inner surface and 2 on outer, both series distad of large spine. Middle and hind femora moderately incrassate, armed distally with 2 or 3 small blunt spines. Labium exceeding forecoxae, reaching mesosternum, but remote from mesocoxae. Length labial segments I 0.48, II 0.54, III 0.50, IV 0.34. Antennae slender, filiform, fourth segment narrowly fusiform. Length antennal segments I 0.32, II 0.96, III 0.78, IV 1.0. Total body length 9.88. *Holotype:* Female: VENEZUELA: Chiragua. Carabobo. 1,700 m. 17.VII.1968 (J. & B. Bechyne). In Universidad Central, Maracay, Venezuela.

This species will key to *P. fuscovenosus* Stål in Slater (1979). It is however not closely related to any of the species in this section of the key, all of which have extensive areas of pruinosity on the dorsal surface. However, the anteriorly curving scent gland auricle directs *osuna* to this section of the key. It actually is much more similar in habitus to *P. englemani* and *P. columbianus* both of which have completely shining dark pronota, but both have posteriorly curving scent gland auricles. In addition *columbianus* has a pruinose scutellum, *englemani* has strongly stalked eyes, is heavily spinose on all femora, has a third labial segment longer than either segments two or four and a bright yellow clavus and corium.

It is a pleasure to dedicate this new species to Dr. Eduardo Osuna for his contributions to our knowledge of Venezuelan Hemiptera.

ACKNOWLEDGMENTS

We are indebted to Mr. Ernesto Barrera (UNAM) for the collection of the species of *Toonglasa* discussed in the present paper; to Dr. Eduardo Osuna (Universidad Central, Maracay, Venezuela) for the loan of the specimen of *Patritius*; to Dra. Patricia Davila (Dept. Botany UNAM) for identification of the bamboo species; and to Ms. Mary Jane Spring (University of Connecticut) for aid in the preparation of the illustrations.

LITERATURE CITED

Slater, J. A. 1976. Monocots and chinch bugs: a study of host plant relationships in the lygaeid subfamily Blissinae (Hemiptera: Lygaeidae). Biotropica 8:143–165.

Slater, J. A. 1979. A key to the species of *Patritius* Stal with the description of four new species from South America (Hemiptera: Lygaeidae). Proc. Ent. Soc. Wash. 81:591–601.

Slater, J. A. and I. Ahmad. 1965. A revision of the genus *Pirkimerus* Distant (Hemiptera: Lygaeidae, Blissinae). Trans. R. Ent. Soc. London 117:313–328.

Slater, J. A. and H. Brailovsky. 1983. Review of the Neotropical genus *Toonglasa* (Hemiptera: Lygaeidae). Ann. Entomol. Soc. Amer. 76:523–535.

Slater, J. A. and H. Brailovsky. 1990. A further contribution to the systematics of the genus *Toonglasa* (Hemiptera: Lygaeidae; Blissinae). Jour. N.Y. Ent. Soc. 98:406–423.

Received 15 September 1993; accepted 23 February 1994.